

Fig. 1

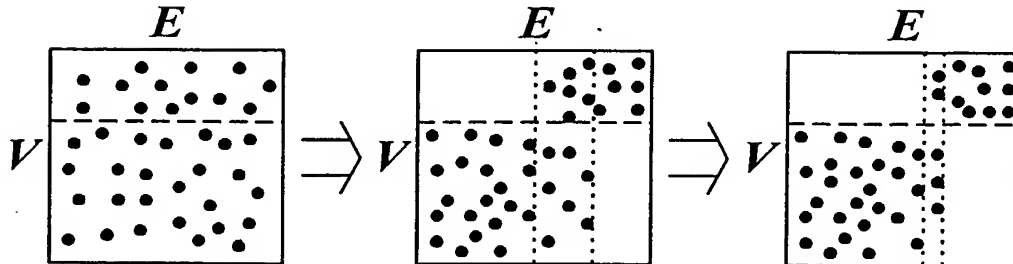


Fig. 2

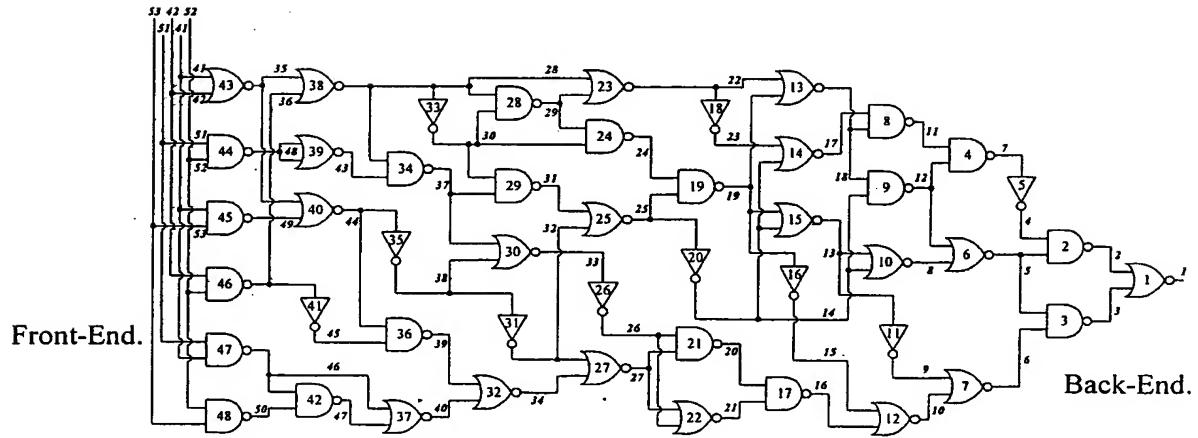


Fig. 3

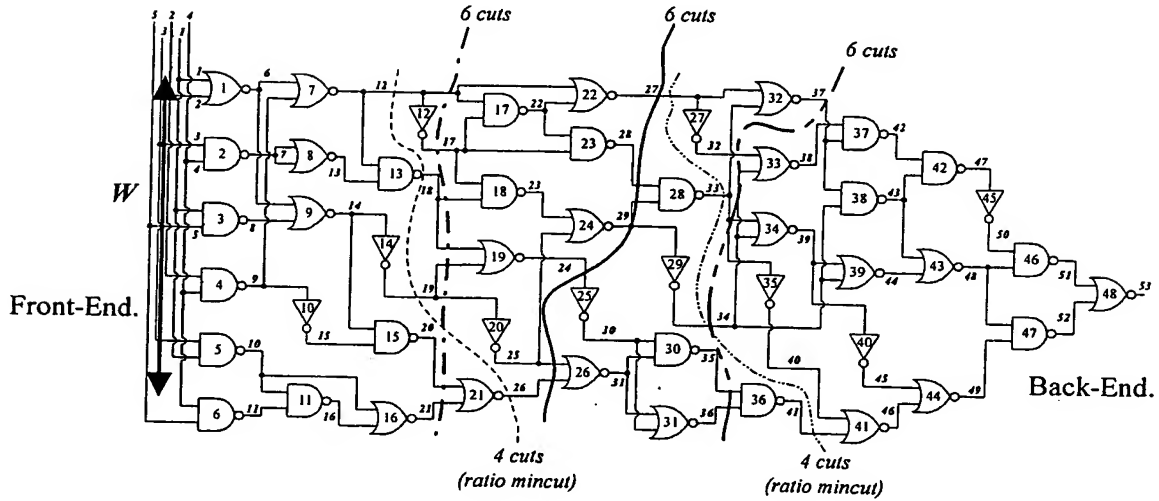


Fig. 4

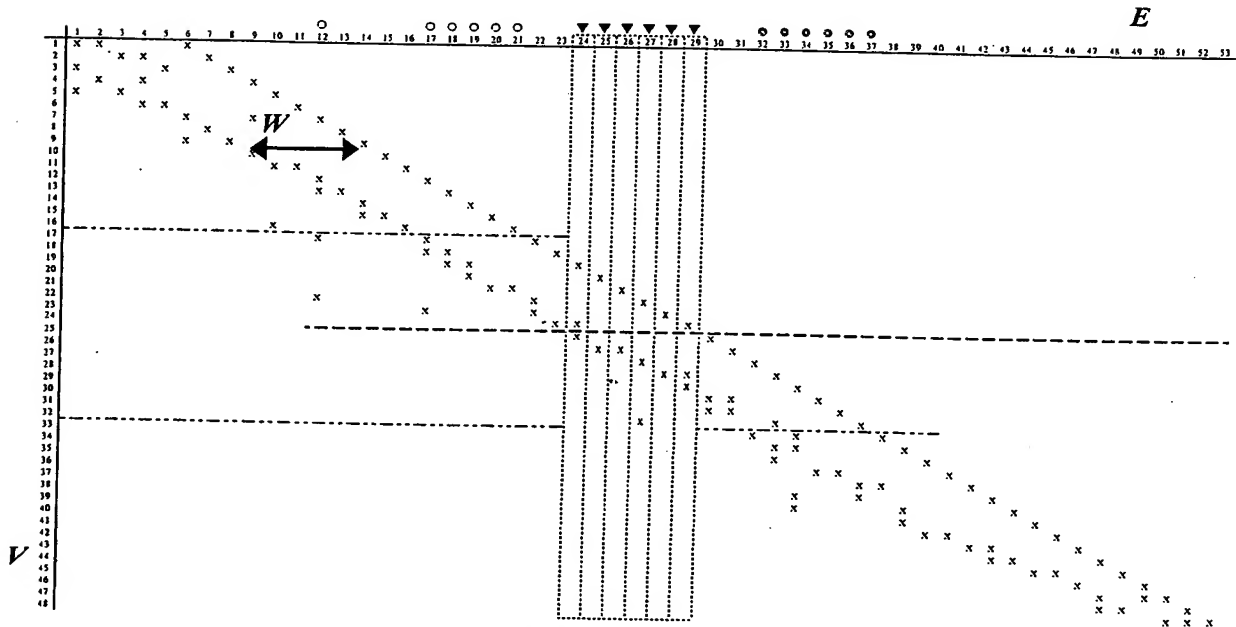
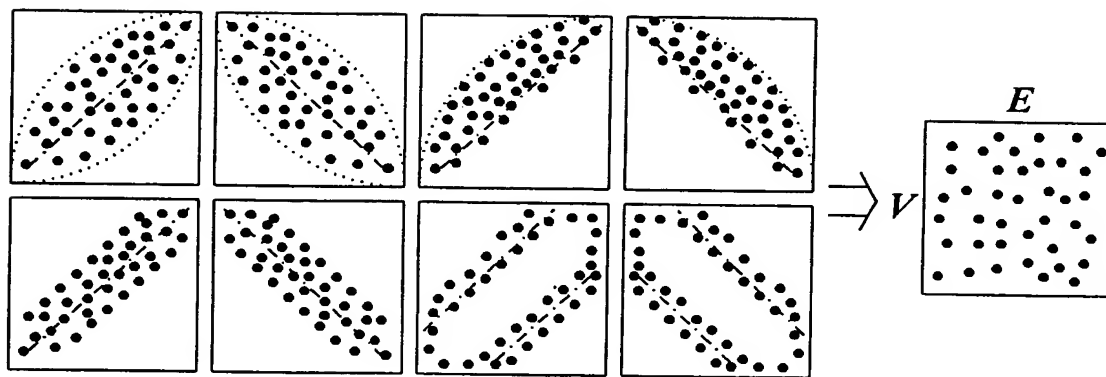


Fig. 5

*Fig. 6*

```
#include <stdlib.h>
#include <stdio.h>
#include <time.h>

#define Required_Num 48
int A[Required_Num], B[Required_Num], C[Required_Num];

int main(void)
{
    int i, j, m, n, seed, non_used;
    time_t t;

    for(i=0; i< Required_Num; i++)
    { A[i] =0; B[i] =i+1; } /* For initialize */

    seed = (unsigned) time(&t); /* srand((unsigned) time(&t));*/
    srand( seed );

    printf("\nSeed %u, random numbers from 1 to %d\n", seed, Required_Num);
    for(i= Required_Num-1; i>=0; i--)
    {
        int k;
        k = (rand() % Required_Num);
        printf("%2d\t", k+1);
        if( B[k] != 0 ) { A[i] = k+1; B[k] = 0; }
    }
    printf("\nArray A... Non-repeated generated numbers (from back-end):\n");
    for(i=0; i< Required_Num; i++) printf("%2d\t", A[i]);

    printf("\nArray B... Not yet used numbers\n");
    j=0;
    for(i=0; i< Required_Num; i++)
    {
        if(B[i]!=0)
        { C[j]=B[i];
          printf("%2d\t", B[i]);
          j++;
        }
    }
    non_used=j;
    printf("\nInsert Sequence of "
           "Non-yet-used Numbers...\n");
    m=n=0;
    for(i=0; i<Required_Num; i++)
    {
        if(A[i]==0)
        {
            if( (j%2) == 0 )
            {
                A[i] = C[non_used-1-m]; m++;
            }
            else
            {
                A[i] = C[n]; n++;
            }
            printf("%2d\t", A[i]);
            j--;
        }
    }
    printf("\nAfter Modified...\n");
    for(i=0; i< Required_Num; i++)
        printf("%2d\t", A[i]);

    return 0;
}
```

SOME OUTPUT RESULTS:

Seed 35986, random numbers from 1 to 48
 38 45 42 5 31 44 47 4 22 23
 9 36 27 7 32 5 12 8 29 11
 6 11 19 6 13 9 41 3 40 9
 43 23 32 36 1 25 26 24 15 32
 2 26 47 30 42 17 28 29

Array A... Non-repeated generated numbers (from back-end):
 0 28 17 0 30 0 0 2 0 15
 24 26 25 1 0 0 0 43 0 40
 3 41 0 13 0 19 0 6 11 29
 8 12 0 32 7 27 36 9 23 22
 4 47 44 31 5 42 45 38

Array B... Not yet used numbers
 10 14 16 18 20 21 33 34 35 37
 39 46 48

Insert Sequence of Non-yet-used Numbers...
 10 48 14 46 16 39 18 37 20 35
 21 34 33

After Modified...
 10 28 17 48 30 14 46 2 16 15
 24 26 25 1 39 18 37 43 20 40
 3 41 35 13 21 19 34 6 11 29
 8 12 33 32 7 27 36 9 23 22
 4 47 44 31 5 42 45 38

Seed 3350, random numbers from 1 to 48
 44 13 35 29 43 22 48 37 39 41
 6 39 37 4 4 46 31 38 15 27
 29 40 41 17 38 32 14 22 7 8
 32 23 18 27 5 11 26 1 47 44
 30 28 44 19 37 34 48 34

Array A... Non-repeated generated numbers (from back-end):
 0 0 34 0 19 0 28 30 0 47
 1 26 11 5 0 18 23 0 8 7
 0 14 32 0 17 0 40 0 27 15
 38 31 46 0 4 0 0 6 41 39
 37 48 22 43 29 35 13 44

Array B... Not yet used numbers
 2 3 9 10 12 16 20 21 24 25
 33 36 42 45

Insert Sequence of Non-yet-used Numbers...
 45 2 42 3 36 9 33 10 25 12
 24 16 21 20

After Modified...
 45 2 34 42 19 3 28 30 36 47
 1 26 11 5 9 18 23 33 8 7
 10 14 32 25 17 12 40 24 27 15
 38 31 46 16 4 21 20 6 41 39
 37 48 22 43 29 35 13 44

Fig. 7

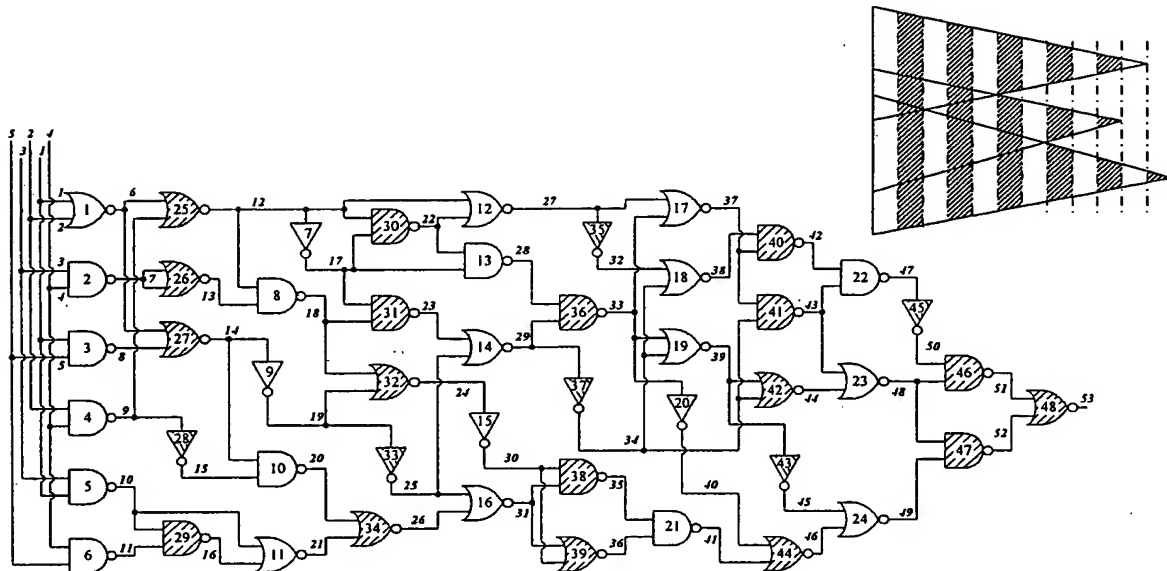


Fig. 8A

Seed 34731, random numbers from 1 to 24											
1	10	21	8	17	6	4	7	22	15		
9	9	12	13	12	19	6	4	10	21		
23	11	4	24								
Array A... Non-repeated generated numbers (from back-end)											
24	0	11	23	0	0	0	0	19	0		
13	12	0	9	15	22	7	4	6	17		
8	21	10	1								
Array B... Not yet used numbers											
2	3	5	14	16	18	20					
Insert Sequence of Non-yet-used Numbers...											
2	20	3	18	5	16	14					
After Modified...											
24	2	11	23	20	3	18	5	19	16		
13	12	14	9	15	22	7	4	6	17		
8	21	10	1								

Seed 34797, random numbers from 25 to 48											
33	41	28	40	33	45	36	48	44	39		
27	47	35	37	30	31	44	33	46	25		
35	28	30	46								
Array A... Non-repeated generated numbers (from back-end)											
0	0	0	0	25	46	0	0	31	30		
37	35	47	27	39	44	48	36	45	0		
40	28	41	33								
Array B... Not yet used numbers											
26	29	32	34	38	42	43					
Insert Sequence of Non-yet-used Numbers...											
26	43	29	42	32	38	34					
After Modified...											
26	43	29	42	25	46	32	38	31	30		
37	35	47	27	39	44	48	36	45	34		
40	28	41	33								

Fig. 8B

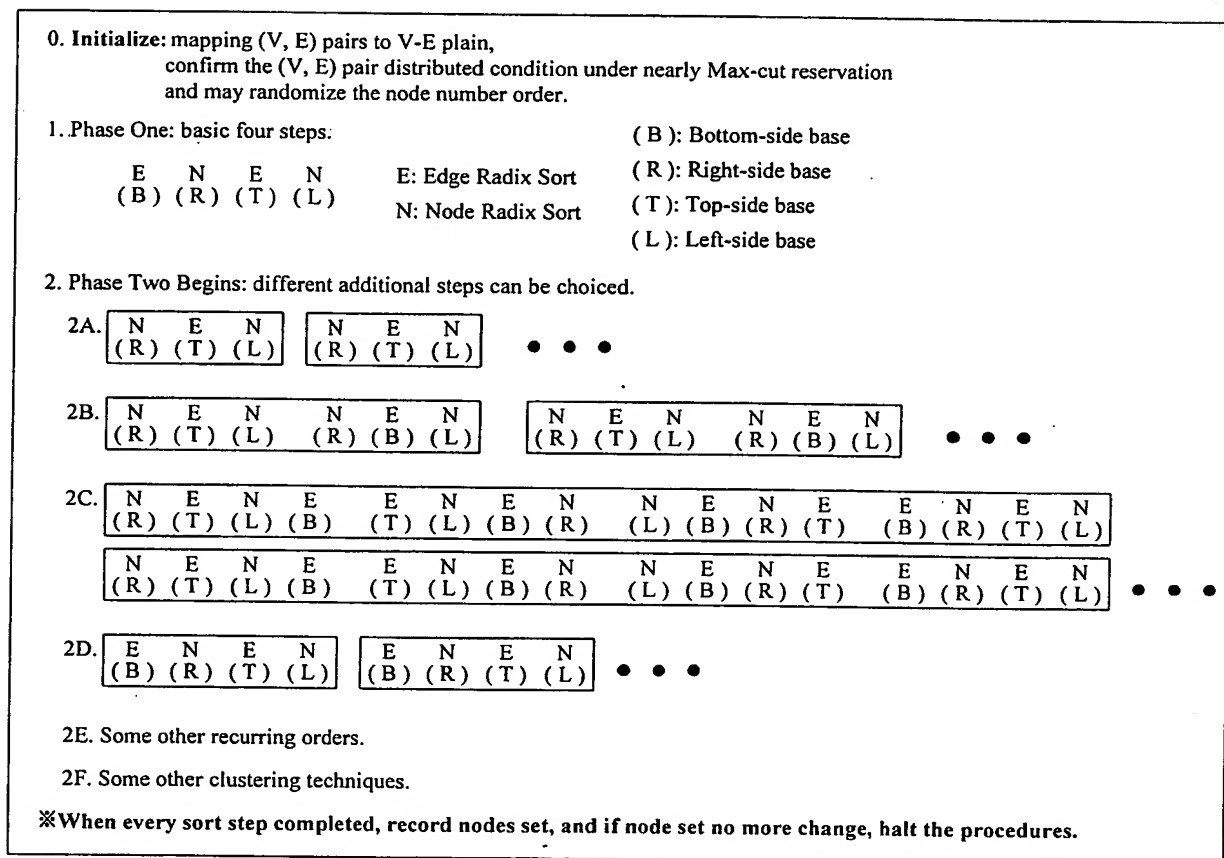
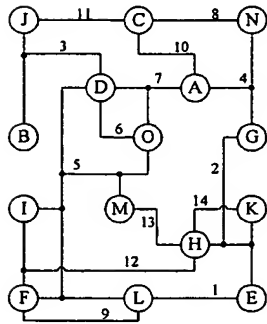
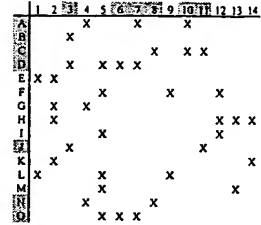


Fig. 9



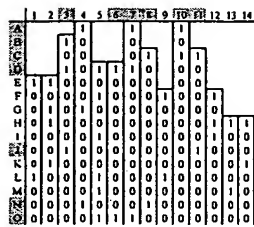
initialize
 mapping
 to
 V-E plain



A 14 edges / 15 nodes example.

Confirm the distributed condition.

Fig. 10A



Sort step 1
 from edge view
 (bottom-side base)

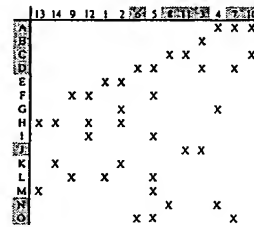
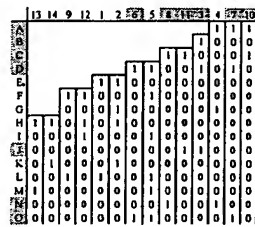
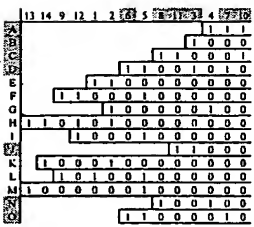


Fig. 10B



Sort step 2
 from node view
 (right-side base)

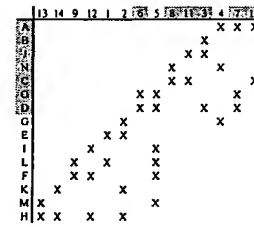
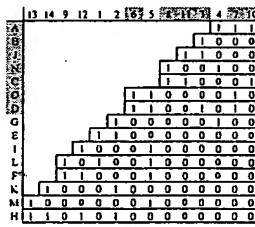


Fig. 10C

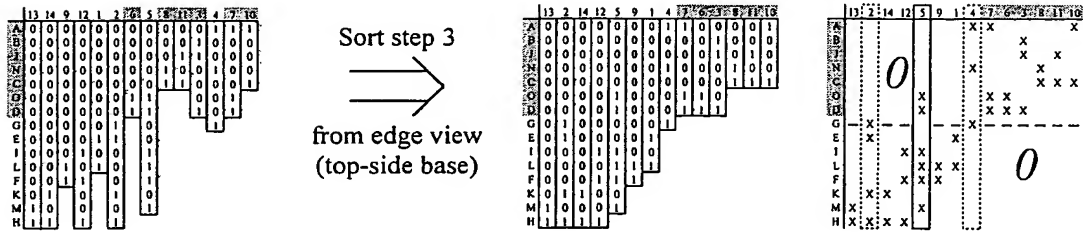


Fig. 10D

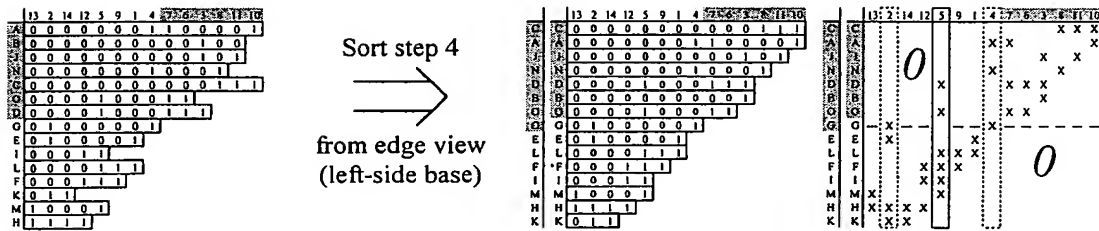


Fig. 10E

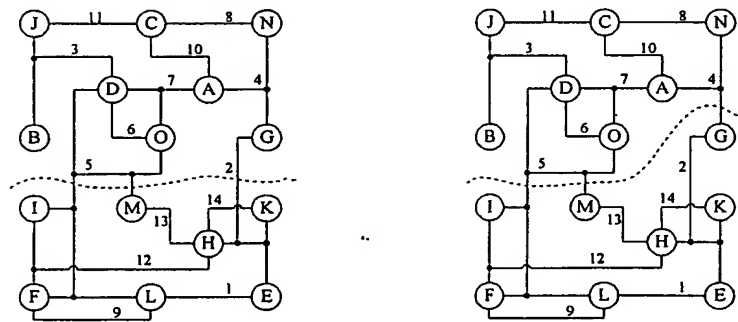


Fig. 10F

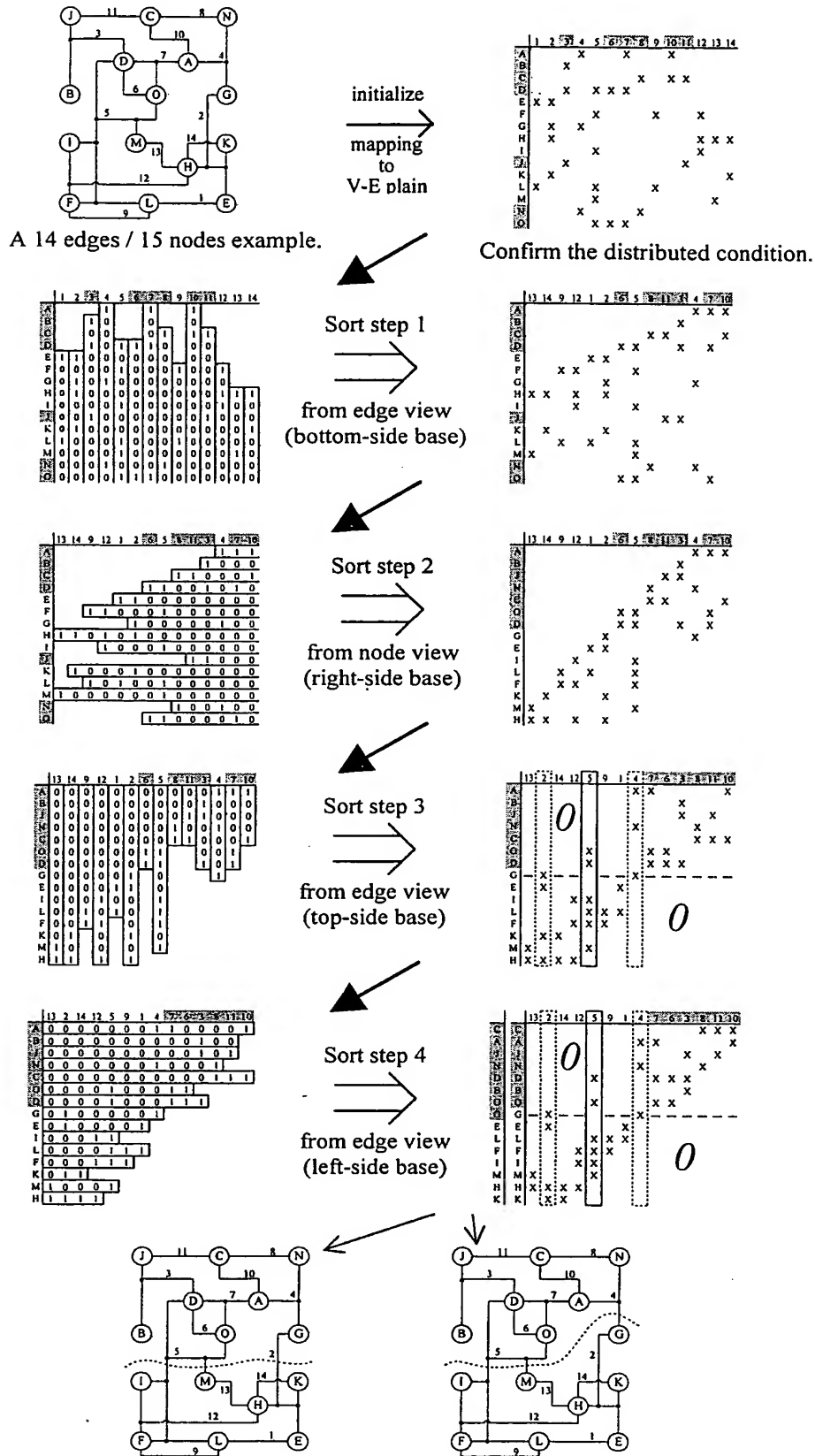


Fig. 11

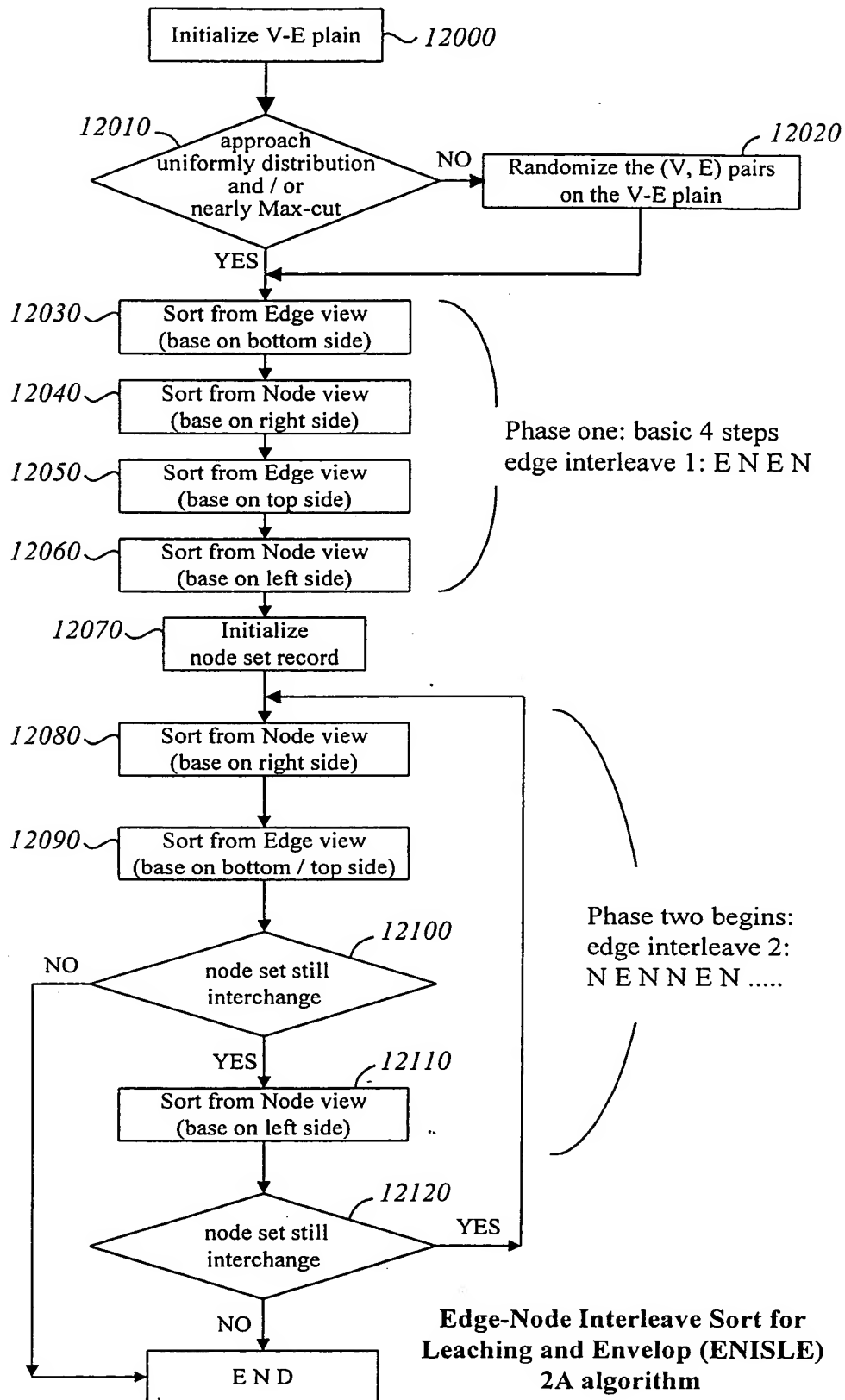


Fig. 12

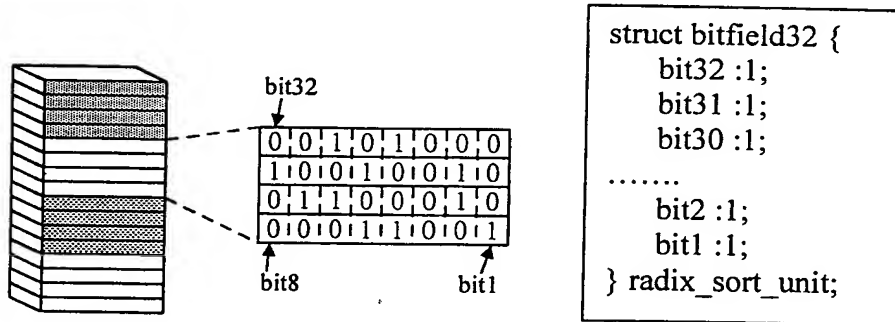


Fig. 13

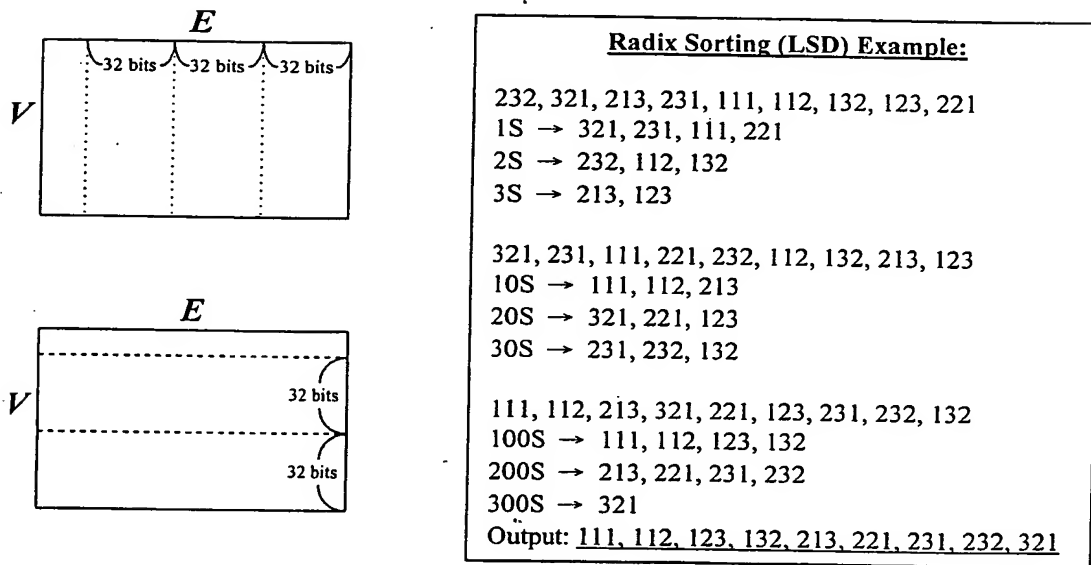
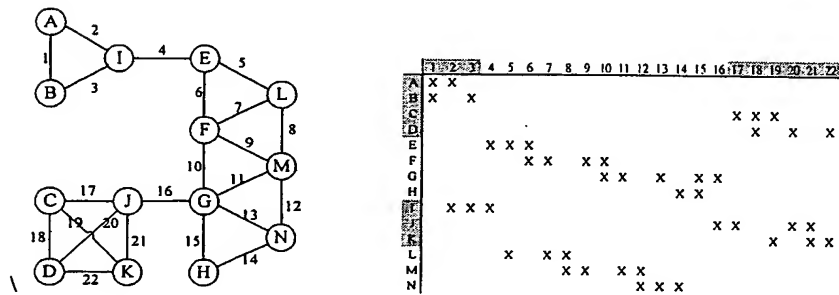
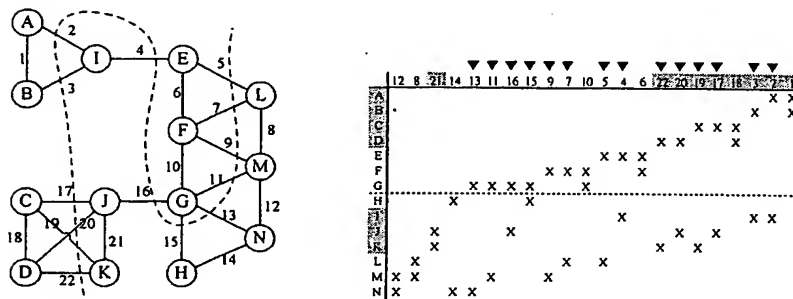


Fig. 14



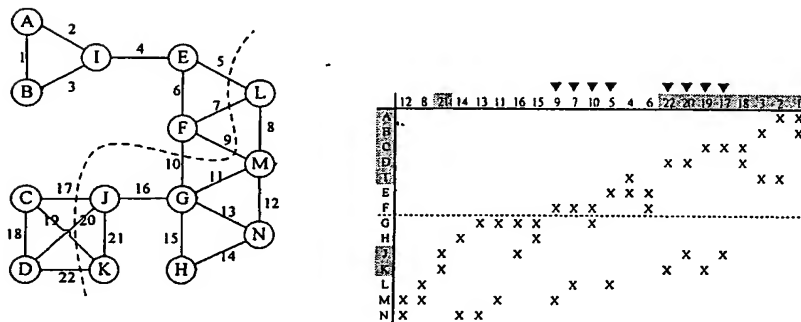
Initialize the V-E Plain.

Fig. 15A



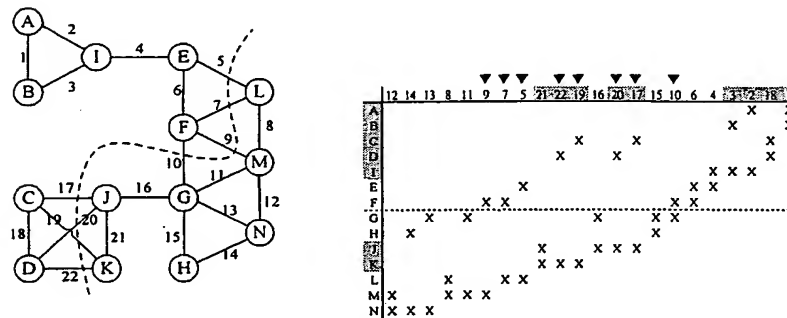
Step 1, cut numbers: 14.

Fig. 15B



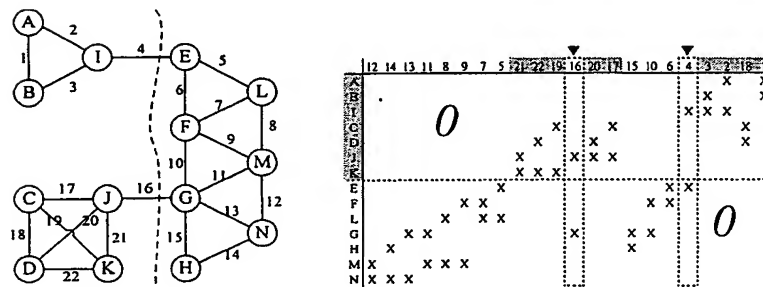
Step 2, cut numbers: 8.

Fig. 15C



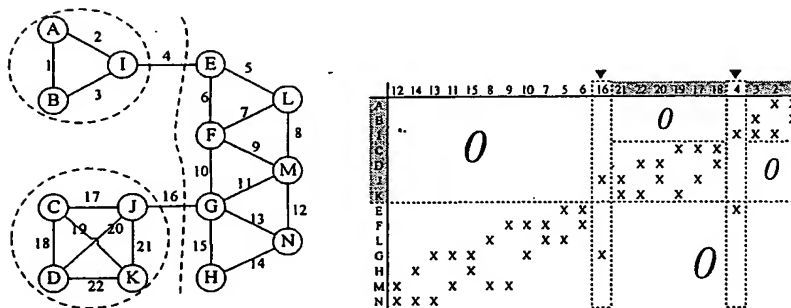
Step 3, 4, cut numbers: 8.

Fig. 15D



Step 5, cut numbers: 2.

Fig. 15E



Step 6, cut numbers: 2.

Fig. 15F

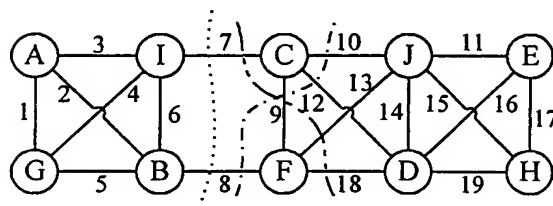


Fig. 16

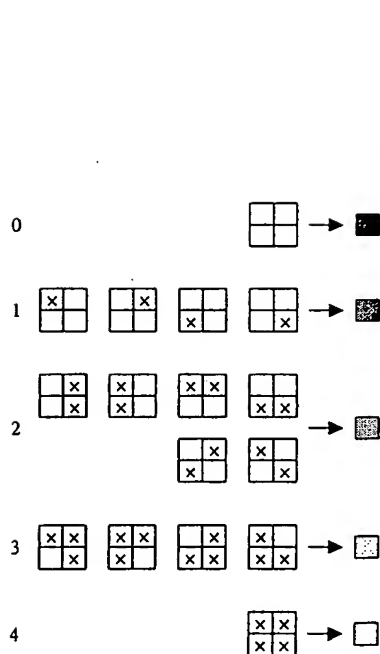


Fig. 17A

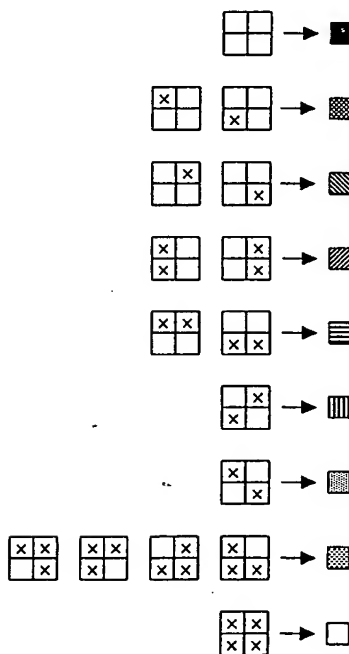


Fig. 17B

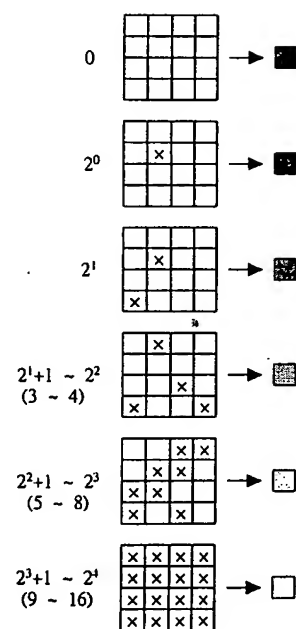
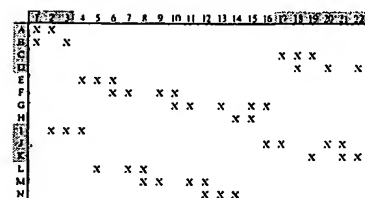
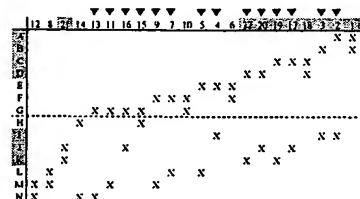


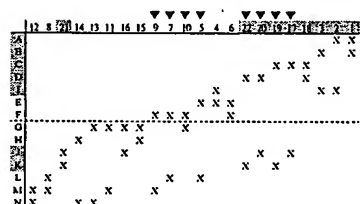
Fig. 17C



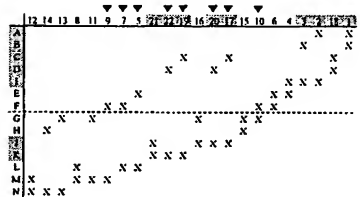
Initialize.



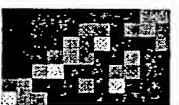
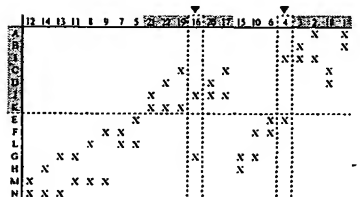
Step 1.



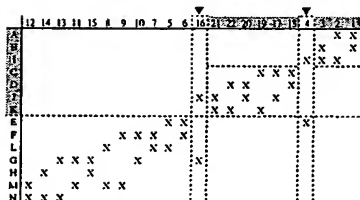
Step 2.



Step 3, 4.



Step 5.



Step 6.

Fig. 18.

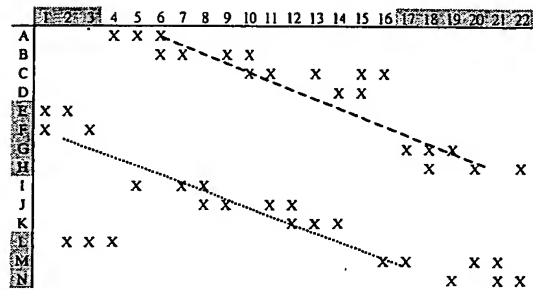
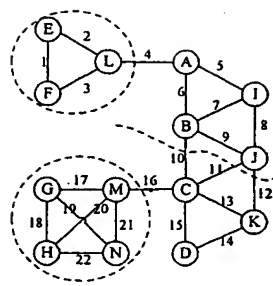


Fig. 19

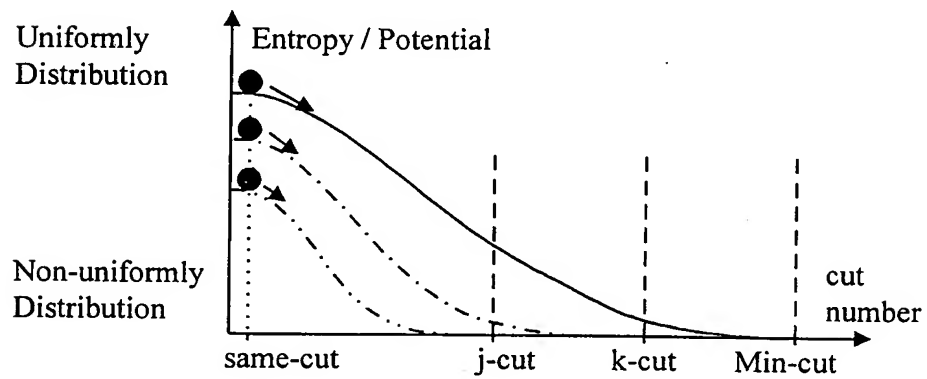


Fig. 20A

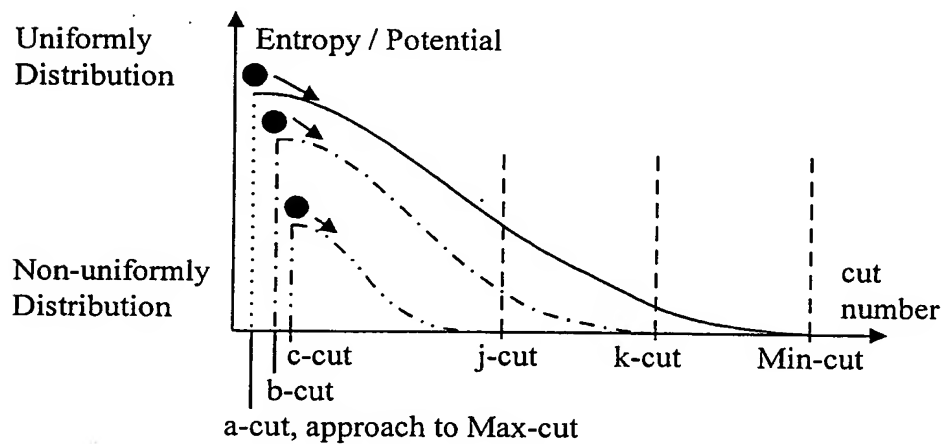


Fig. 20B

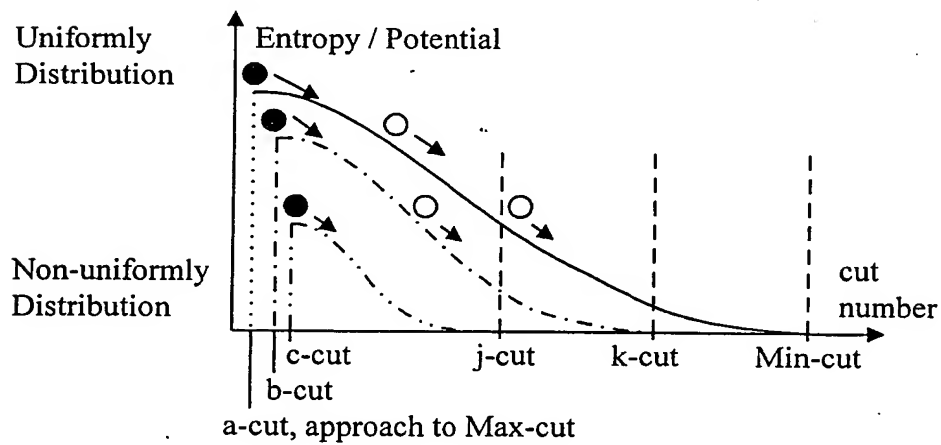


Fig. 20C